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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,319	03/11/2004	Daniel Freifeld	102170-300	1761
27267	7590	07/14/2004	EXAMINER	
WIGGIN AND DANA LLP ATTENTION: PATENT DOCKETING ONE CENTURY TOWER, P.O. BOX 1832 NEW HAVEN, CT 06508-1832			PHAM, HOA Q	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/800,319

Applicant(s)

FREIFELD, DANIEL

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-29 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/11/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the limitation "multitude of photodetectors" in claims 25 and 26 are not supported by the specification.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross et al (4,585,349) in view of Horijon et al (5,512,760).

Regarding claim 19, Gross et al (of record) discloses a lens (3) having a high degree of chromatic aberration and a sensor (7) including at least first photodetector and second photodetector (p1-pn), a diffraction grating (6) disposed between the lens and the sensor and a processor (80) receives electrical outputs from each of the photodetectors to determine the position or distance of the object (4) from the lens (figure 1, column 3, lines 5-18 and 55-69, column 4, lines 24-35, column 5, lines 5-8, 65-68, column 7, lines 5-8).

Gross et al does not explicitly teach that the height of the object is determined; however, such a feature is known in the art as taught by Horijon et al. Horijon et al from

the same field of endeavor, teach that the height of the object can be determined on the basis of the position of the object (claim 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic device of Gross et al to determine the height of the object as taught by Horijon et al if addition measurement is desired.

Regarding claim 20, it would have been obvious to replace the lens of Gross et al by a lens has a numerical aperture of at least 0.1 for the same purpose of increasing the range of depth measurement.

Regarding claim 21, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the lens of Gross et al by a telecentric lens because the would function in the same manner.

Regarding claims 22-24, Horijon et al teaches the use of one dimensional or two dimensional scanner (column 11, lines 9-14), thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Gross et al means for moving the object in the x, y, or z axis as suggested by Horijon et al so that the entire surface of the object is inspected.

4. Claims 25-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross et al and Horijon et al as applied to claims 19-24 above, and further in view of Fowler et al (5,850,289).

Regarding claims 25-26, figure 1 of Fowler et al (of record) teach the use of a rectangular array (34) that is tilted at an angle with respect to the optical axis and Gross

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teaches the use of a CCD having a plurality of photodetectors (column 3, lines 55-68), thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the CCD of Gross by a regular rectangular array sensor as taught by Fowler et al because they would function in the same manner.

Regarding claims 27-29, Fowler et al, teaches that the processing needs to identify common points successive scan files is much reduced and should be easily achievable in real time (column 15 lines 6-7). Thus, it would have been obvious to include in Fowler et al a trigger and motion control for the purpose of independently read the signals.

Regarding claim 31, see column 15 lines 14-16 of Gross for comparison with a stored standard, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Gross et al a comparison as taught by Gross et al if a calibration step is desired.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Picard (4,965,441) and Scheruebl et al (6,674,572) disclose a scanning confocal microscope and Strater et al (5,165,063) discloses a device for measuring distance.

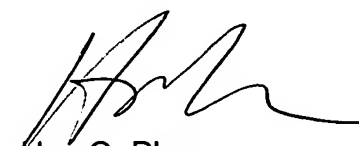
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-

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2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham  
Primary Examiner  
Art Unit 2877

HP  
July 12, 2004